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**OPERATIONS RESEARCH SOCIETY
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Number 16**



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J. S. Aronofsky
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PROGRESS IN OPERATIONS RESEARCH

*Relationship Between
Operations Research
and the Computer*

Volume III

edited by

JULIUS S. ARONOFSKY

UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA
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PREFACE

Much has been written about the explosive growth of technology and the related need for more articles that summarize the state of the art and provide an overview for an audience that is being deluged by a tidal wave of detailed technical papers. The problem compounds itself when the subject matter cuts across two of the fastest-growing components in the expanding technology, namely, operations research and computers.

This volume is intended to review and present the state of the art on topics that deal with the relationship between operations research and the computer, and each chapter was prepared by a contributing author. The first volume of this series, edited by Russell L. Ackoff and published in 1961,¹ was devoted to an exposition of technical progress in the development of modeling techniques and ways of using these techniques to solve problems. The second volume, edited by David B. Hertz and Roger T. Eddison and published in 1964,² was directed at consolidating and reviewing the literature in specific areas of application. Volume II contained chapters on major functional elements in business and government. Because of the fine reception accorded to Volumes I and II, it is the intention of the Operations Research Society of America (ORSA) to continue the *Progress in Operations Research* series, by alternating between volumes concerned with methodology and technique and volumes concerned with applications.

The Council of the Society and I, as Editor, agreed that it would be worthwhile to organize a "progress" volume aimed at broadening the horizon of the serious student of operations research on the subject of computers. To do this it was decided to ask the contributing authors to

¹ R. L. Ackoff (ed.), *Progress in Operations Research*, Vol. I, Wiley, New York, 1961.

² D. B. Hertz and R. T. Eddison (eds.), *Progress in Operations Research*, Vol. II, Wiley, New York, 1964.

prepare material that would be responsive to broadly selected topic headings. All were given a free hand to develop critical as well as expository material. I, of course, bear the responsibility for any omissions of relevant chapter headings that should have been included in order to do justice to the subtitle: *Relationship Between Operations Research and the Computer*.

I should like to express my personal appreciation to each of the contributors for his cooperation in the development of this volume. I am also greatly indebted to Russell L. Ackoff for his advice and encouragement and to David B. Hertz for his counsel and support as Editor of the Operations Research Society of America's Publications in Operations Research. Of course, the very existence of the volume is due to the decision of the Society to initiate the series of Publications in Operations Research, in collaboration with John Wiley & Sons. My role as Editor was made possible by the very real support provided by Mobil Oil Corporation, where I was employed as Manager of the Corporate Operations Research Department.

J. S. ARONOFSKY

Philadelphia, Pennsylvania
October 1968

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